IHICS

INTEGRATED HABITAT INVENTORY & CLASSIFICATION SYSTEM

BLM's Habitat Inventory System

U.S. DEPT. OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

IHICS STEPS

1. MAPPING
2. STRATIFICATION
3. CLASSIFICATION
4. INVENTORY OF HABITAT-SPECIES RELATIONSHIPS
5. SITE SPECIFIC INVENTORY
6. FIELD DATA INTERPRETATION
7. DATA STORAGE, RETRIEVAL AND ANALYSIS
8. MANAGEMENT APPLICATIONS

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WILDLIFE INVENTORY PROCEDURES

-FIELD COMPLETES 6602 FORMS

-SEND COMPLETED FORMS TO D472

-D472 CHECKS AND SENDS TO KEYENTRY

-DATA IS KEYED

-MASTER FILES INITIALIZED BY D472

-INITIAL EDIT-ERROR PROGRAM RUN

VERIFICATION LIST MAILED TO FIELD

WILDLIFE INVENTORY BIOSCIENCES

-FIELD SURVEYS AND LOGS

-DATA IS KEYED

-DATA CHECKED TO ENSURE

-MASTER DATA SYSTEM BY DAS

-DATA IS KEYED TO DATA

-DATA CHECKED AND ERRORS

-FIELD SURVEYS AND LOGS

FIELD MAKES CORRECTIONS ON TERMINAL

MASTER FILES EDITED & UPDATED BY D472

NEW VERIFICATION LIST PRODUCED IF NECESSARY

FIELD MAKES CORRECTIONS AGAIN IF ANY

WHEN ALL CORRECTIONS FINISHED D472 COMPLETES MASTER FILE

D472 PREPARES STANDARD REPORTS

D472 PREPARES REX FILE FOR FIELD USE

MASTER FILES ARE ARCHIVED BY D472

MASTER MENU SYSTEM

DATA ENTRY AND EDITING BY DATE

USE OF THIS SYSTEM FOR ANY

PURPOSES STANDARD DISCLAIMERS

COMPLETE MASTER MENU

ALL CHANGES SUBJECT TO

NEW OPERATING INSTRUCTIONS

240 DATA

VERSION 41 PRODUCED 1ST NOVEMBER

MASTER FILES EDITED & UPDATED BY

240 DATA

FIELD NAMES CORRECTIONS ON TERMINAL

IHICS, THE BUREAU OF LAND MANAGEMENT'S WILDLIFE HABITAT INVENTORY SYSTEM

by Carole K. Hamilton*
Richard M. Kerr**
Larry A. Peterson***

INTRODUCTION

In its wildlife management role, the Bureau of Land Management (BLM) is responsible for managing the habitats, rather than the population levels, of game and nongame species. To help it meet this responsibility, the BLM uses the Integrated Habitat Inventory and Classification System (or IHICS) (USBLM 1982). The IHICS is designed specifically to describe, classify, store, and retrieve data by habitat type rather than by animal species.

The BLM developed IHICS in 1975 as part of a Bureauwide plan to integrate renewable resource inventory data in an automated data base. Wildlife information, just one element of the system, is integrated with other renewable resource or resource-related data, such as information on vegetation, soils, water, topography, and climate.

Animal information collected and stored in the IHICS includes data on nongame species and their habitats as well as the traditional site-specific data on game animals. The IHICS contains these data to help the BLM respond to its increasing wildlife habitat management responsibilities as described in laws passed during the past 50 years. The Taylor Grazing Act of 1934 gave the Grazing Service, one of the predecessors of the BLM, the original authority to cooperate with State wildlife agencies in managing wildlife on the public lands. This early cooperative effort focused mainly on managing game species, due to the State wildlife agencies' statutory authorities and the economic returns from game animals. During the 1960's and 1970's, the United States Congress began passing laws that broadened the BLM's wildlife habitat management responsibilities. These laws, including the Endangered Species Act of 1973, the National Environmental Policy Act of 1969, and, finally, the Federal Land Policy and Management Act of 1976, obligate the BLM to manage habitat not only for game species, but for all species on the public lands. Therefore, the IHICS system accommodates both game and nongame species and habitat information.

Traditionally, the BLM has used an integrated approach to mapping and delineating certain types of vegetation in its resource inventory system. The IHICS is also an integrated system, which has eight basic parts: (1) mapping, (2) stratification, (3) classification, (4) inventory of habitat-species relationships, (5) site-specific inventory, (6) field data interpretations and compilation, (7) data storage, retrieval and analysis, and (8) management applications.

MAPPING

To aggregate wildlife habitat data from site-specific levels to higher, more generalized levels of the IHICS classification system, a mapping unit is used to collect and quantify data. This mapping unit is delineated on aerial photographs as a polygon--homogeneous for existing vegetation, landform and soil. Mapping units may be any size but typically range between 2 acres and 10,000 acres. In IHICS the mapping unit is termed a Habitat Site. In the BLM's vegetation inventory system it is called a Site Writeup Area, or SWA.

Mapping units, or Habitat Sites, are first pretyped on aerial photos (1:24,000) or orthophotoquads. This is done by examining the photos or orthophotoquads in the office and using

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available soil inventory overlays or ecological site delineations to draw boundary lines around homogeneous areas of existing vegetation, landform and soils. Management boundaries also influence the delineation of mapping units, e.g., a grazing allotment boundary is not crossed because it may be necessary to accumulate and analyze data by grazing allotment. Similarly, BLM Resource Area boundaries are not crossed when delineating mapping units. Once delineated, each mapping unit is assigned a unique designation (four-character alpha-numeric code) within the inventory area.

Once the photos are pretyped, the boundaries or delineations established in the office are checked in the field by visual observation. During field-checking, data on landform, site elevation, dominant and subdominant vegetation (by visual observation or vegetation sampling data), aspect (by cardinal direction), and slope are recorded on standard forms (Figures 1, 2, 3, 4). Mappable units (Habitat Sites) which have been checked and verified are transferred to 1:24,000 USGS quadrangle maps if orthophotoquad maps were not used.

STRATIFICATION

After all Habitat Sites have been given a unique designation and initial habitat information has been gathered and recorded on standard forms, the Habitat Sites are placed in strata called Standard Habitat Sites. The number and types of Standard Habitat Sites are determined by the biologist from a field review of the dominant and subdominant vegetation, landform and other factors required for the specific inventory. Each stratum is assigned a Standard Habitat Site number and name.

CLASSIFICATION

When BLM developed IHICS, two types of classification systems existed, the integrated and hierarchical component systems. The first type, the integrated classification system, lumps all components of habitat into homogeneous polygons that can be delineated on a map. The second system, or hierarchical component system, generally includes a hierarchical classification of just one component of the habitat. For example, classification systems using Daubenmire's (Daubenmire 1968) habitat types tend to make characterizations based only on one component, the vegetation. Other systems use other components, such as soils, landform, etc., in a hierarchy. Since the occupancy and use of a piece of land by wildlife is dependent on an intermixture of all of these components, a system that builds a hierarchy on only one component is not useful for wildlife data extrapolation. Therefore, an integrated system leading to a hierarchy of ecosystems such as IHICS would be best for wildlife management. Examples of integrated ecosytems are found in the broad characterizations of Kuchler (1964, 1975), Bailey (1978), and others. Physical barriers such as mountains, rivers, and long distances have made migration barriers for various wildlife species, causing them to evolve into certain subspecies within their own localities. Habitats within a region may have different species and subspecies associated within them. Therefore, an important aspect of the IHICS classification system as used by a wildlife manager would be the regionalization, both locally and nationally, of the ecosystems used.

Ecological relationships are more easily interpreted if habitat classification systems are used which allow data to be segregated by different intensities of field survey or if the system considers more than one ecosystem determinate. This type of classification system will permit habitat analysis at less complex classification levels, i.e., the Habitat Site or Standard Habitat Site level in IHICS, or the aggregation of data from simple to more complex classification levels of the system. The BLM developed IHICS as its hierarchical land classification system. In IHICS, the data specificity of habitat factors at lower classification levels becomes more generalized at

the higher classification levels, allowing data aggregation and analysis at different degrees of complexity. The system moves upward from its lowest classification level, the Habitat Site, to the Standard Habitat Site, association, subphysiographic region, and, at the top, the physiographic region (Figure 5). IHICS is not a hierarchical classification of biotic and abiotic components, but rather a hierarchical classification of habitat types which are a mixture of these components.

The Habitat Site, the lowest level of the classification system, is a mappable unit composed of homogeneous forms of vegetation, soil, and landform. The Standard Habitat Site is the aggregation of Habitat Sites having similar vegetation, landform, and soil. The next classification level in the hierarchy is the association. Using the Physiographic Region Map, based on "Potential Natural Vegetation of the Conterminous United States" by Kuchler (1975), the biologist determines and records in which of the numbered associations the Habitat Site, Standard Habitat Site, and Special Habitat Feature are located. For the highest level of the classification system, the physiographic region, the biologist records the classification code on all field forms using the Physiographic Region Map (Brown and Kerr 1979). In Alaska, this is also done for subphysiographic regions. Other codes are available for cross-referencing to Bailey's ecoregions, biomes, and habitat type classifications.

The classifications above the Standard Habitat Site level (associations and physiographic regions) are used to: (1) construct lists of hypothetical species in Standard Habitat Sites or Habitat Sites; (2) provide boundaries for extrapolation of field (vegetation and animal) data; and (3) determine which habitats are in short supply.

In a broader context, wildlife habitat data collected in the entire IHICS provide information for environmental assessments, environmental impact statements, regional habitat analyses, and national resource inventories as well as facilitate data analysis for land-use planning and decisionmaking. In addition, the IHICS provides data interchange with the classification systems of other Federal, State, and private organizations to meet resource management needs.

INVENTORY OF HABITAT-SPECIES RELATIONSHIPS

Once mapping units (Habitat Sites) have been delineated and classified, the next step is to collect data that will reveal species-habitat relationships. For each Standard Habitat Site, representative Habitat Sites are selected for sampling vegetation and wildlife. Within each representative Habitat Site, the biologist collects data on animal occurrence, vegetation composition, and vegetation structure. Vegetation information is obtained either from existing inventory data or collected and recorded on a Resource Field Data Summary Sheet (Figures 6, 7). The biologist prepares a list of hypothetical wildlife species by association and physiographic region from the literature and then develops a sampling plan to verify the occurrence of hypothetical species. If a complete wildlife inventory is conducted, each animal class (mammals, birds, reptiles, amphibians) is inventoried for one or more seasons, depending on their life cycles. Generally, inventories are conducted for small birds, small mammals, reptiles and amphibians. When time and money are limited, only those classes or species determined important in the management situation are actually inventoried, while species thought to occur in the selected Habitat Sites are listed in the data base as hypothetical. Unique, important animals expected to occur in the inventory area are verified using appropriate inventory methods. After inventories are completed, vegetation data, and animal use and occurrence data are extrapolated to all Habitat Sites in the Standard Habitat Site strata.

Since IHICS uses inventories of existing vegetation, potential vegetation

is usually portrayed in the lower classification levels using ecological sites for rangelands, or habitat types for forests or range. Comparing the existing vegetation with potential vegetation will determine the possibility for managing vegetation to improve habitat for wildlife. This potential determination may be made for large management areas, such as planning units, or small management areas, such as deer feeding areas. Acquiring information on potential vegetation for the total area of rangelands within a Resource Area or District jurisdictional boundary is prohibitively expensive, since typically only a small amount of this information is used in habitat management decisions. Consequently, rather than trying to delineate potential vegetation for all areas, the biologist concentrates on determining the potential of areas where information is necessary for specific immediate wildlife habitat management analysis but is not available from the Soil Conservation Service (SCS) range site system or the forest habitat type system. Succession following commercial forest management may result in rapid changes in structure. However, change in composition and structure of vegetation from range management practices is often slow and subtle in effect. Therefore, information on potential vegetation is typically less important for managing wildlife habitats on rangelands.

SITE-SPECIFIC INVENTORY

For those species important to the management of public lands and for which information cannot be extrapolated, site-specific data must be collected. Habitat Sites (mapping units) provide the mechanism for recording site-specific data since each has a unique number geographically located. Since species such as raptors and wild ungulates are generally mobile and require more than one Habitat Site to meet their biological requirements, not all Habitat Sites of similar character are used. For example, all ponderosa pine stands do not contain deer, thus only those sites actually used by deer are located and recorded. The field forms for site-specific Habitat Site data allow continuous entry of animal occurrence data as it is gathered during inventories or from opportunistic sightings.

Sometimes features of the habitat that are too small to map or do not appear in a vegetation inventory (e.g., springs, wells, power poles, cliffs, etc.) have a major positive or negative effect on occurrence of wildlife species. These features are called Special Habitat Features and their occurrence within individual Habitat Sites is recorded on field forms (Figures 3, 4) by legal description. Since time and money may not allow a complete inventory of all Special Habitat Features, only those features important to wildlife management are inventoried. Generally all water-related Special Habitat Features are inventoried. Species which are affected positively or negatively by Special Habitat Features are listed. Special Habitat Features data give the biologist a second form of site-specific data for a wildlife habitat data base, in addition to the data collected for the Habitat Site.

FIELD DATA INTERPRETATION AND COMPILATION

All field inventory and sampling forms are assembled and data are summarized on IHICS field forms as to animal use, occurrence, relative abundance, and crucial habitats for Habitat Sites and Standard Habitat Sites. Data element codes from the Bureau's Data Element Dictionary (DED) are used to fill out forms.

DATA STORAGE, RETRIEVAL AND ANALYSIS

Data Entry and Storage

Before data entry occurs, all field forms are checked for accuracy. The forms are then either key-entered locally or sent to the BLM's Denver Service Center (DSC). Master files are created on BLM's central computer (presently a Honeywell DPS8) at the DSC. The data are edited using a

series of COBOL edit-error programs to: (1) validate the data against the predefined requirements in the DED (e.g., codes); (2) extract data from the DED (e.g., expansion of species codes); and (3) perform logical edits specified in the edit-error program. A verification list is produced and sent to the field office with computer-detected errors flagged. The field uses interactive programs to correct errors. This process is repeated until all errors are corrected. The corrected data are summarized in standard reports and returned to the field. These same data are used to create REX data bases made available to the field either on a time-sharing computer program on the DSC Honeywell or on a field office microcomputer. REX is a data base management system developed by BLM, then improved and now marketed commercially. Separate data bases are maintained for Habitat Sites, Standard Habitat Sites, and Special Habitat Features for each inventory area. Master files of the data base are permanently stored.

Data Retrieval

Once the REX data bases have been created, the field user retrieves data from REX files on terminals connected to the DSC Honeywell mainframe or microcomputer. REX allows data to be aggregated and sorted by 30 or more data elements on each IHICS form. Numeric data (e.g., acres) can be added and averaged; alpha-numeric data can be sequenced individually or in combination with other data elements. Data for individual species and locations can be selected using logical expressions such as equals, greater than, less than, and, or, not, and range of values.

Data Analysis

Depending on the wildlife management problem at hand, the biologist analyzes the data in the data base using REX or standard reports. The ability to store and retrieve wildlife data using computers allows the biologist to determine such things as wildlife habitats in short supply, animals and amount of habitat affected by land-use actions, stipulations to mitigate impacts, potential location of threatened and endangered (T/E) species, and the total acreage of vertebrate species habitats.

Management Application

The overall purpose of IHICS is to organize wildlife habitat data to aid BLM field personnel in managing wildlife habitat. The computer portion of the system allows the biologist to retrieve and analyze wildlife habitat and species data quickly and to advise and give recommendations to management on how proposed actions will affect wildlife species and habitat. The IHICS data are used to make recommendations for managing BLM public lands in the following areas:

- wildlife habitat management
- land transfers and exchanges
- leases (coal, oil, gas, grazing)
- rights-of-way (power lines, pipelines)
- wilderness appraisals
- recreation development
- material sales
- fire control
- land-use planning, and
- timber sales.

The BLM is currently developing methods to provide additional predictive capability to the IHICS system. Systems such as guilding procedures (Short 1983), life form analyses (Thomas 1979), Habitat Suitability Index (HSI) models (USFWS 1981), and Habitat Evaluation Procedures (HEP) (USFWS 1976) may be added to IHICS in the future.

Figure 1. Animal Species Occurrence

Form 6602-1
(January 1982)

Page 1 of 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ANIMAL SPECIES OCCURRENCE
(Integrated Habitat Inventory and Classification System)

(1) Record Type	W	1
(2) Format Code (1, 2, or 3)	1	
(3) BLM Admin Unit (ST/DI/RA/PU)	NM	03780 5
(4) Standard Habitat Site Code	NM	004
(5) SWA Number	J	021
(6) Action Code (A, C, or I	A	

SHS Name: MIXED SHRUB MOUNTAIN

Recorded by: JOHN DOE

Date: 79/03/01

SECTION I. HABITAT SITE (SWA) DATA

HABITAT SITE IDENTIFICATION

(7) Year Inventory Begun 19 77 Completed 19 78

HABITAT SITE NAME

(8) Dominant Spp QUTU2__

(9) Sub-Dominant Spp CEMØ2__

(10) Landform MTN

SWA CHARACTERISTICS

(11) Structural Height MB

(12) Acres 5577

(13) Slope 30

(14) Aspect W

(15) Elevation 60

(16) Special Habitat Features In Habitat Site (SWA) *(5 Maximum)*
B35 A13 ___ ___ ___

HABITAT CLASSIFICATION/ CROSS REFERENCES

(17) Physiographic region 07

(18) Subphysiographic Region ___

(19) Assoc. 023 (20) Biome D

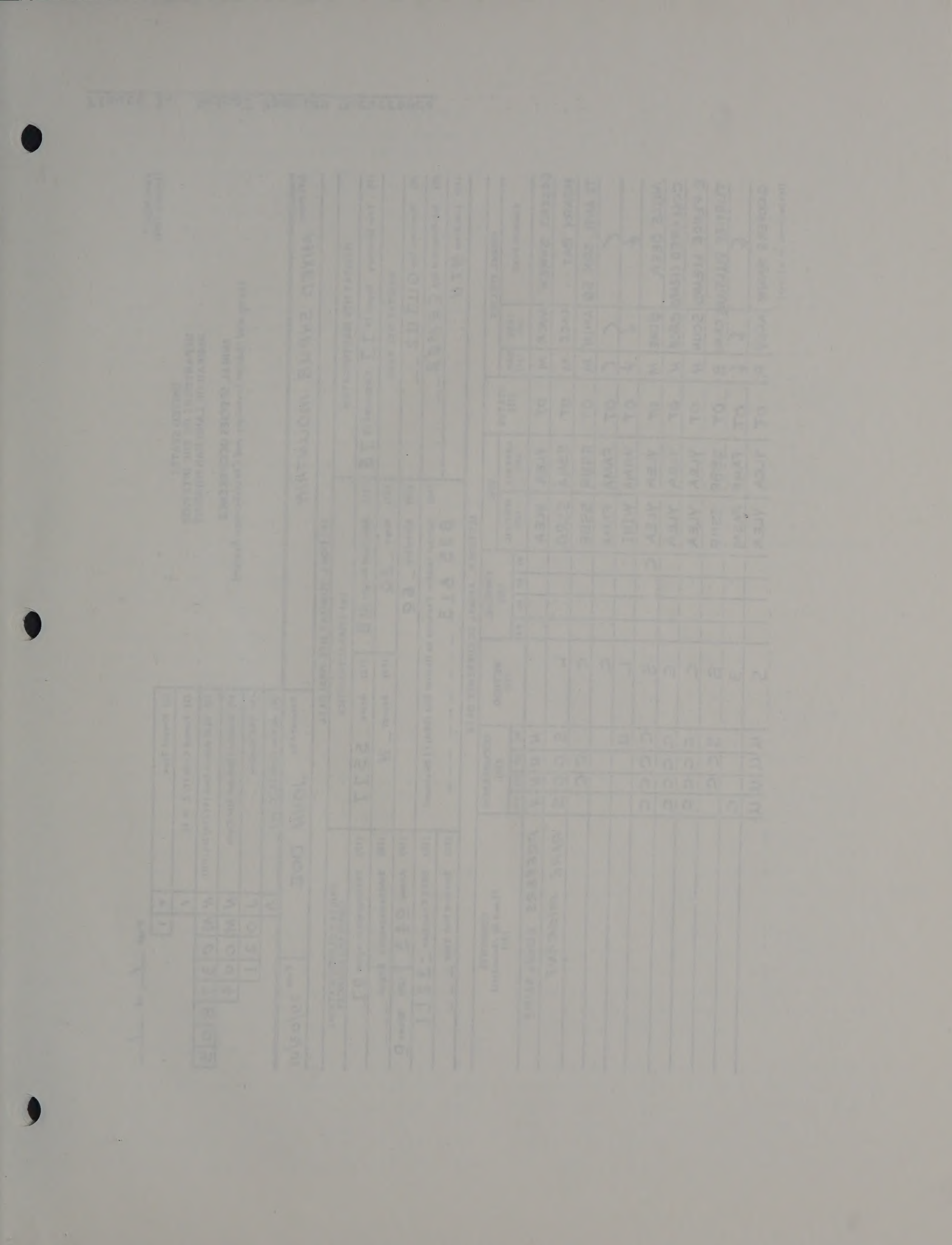
(21) USFS Ecoregion -3211

(22) Standard Hab Type ___

SECTION II. ANIMAL OCCURRENCE DATA

ANIMAL SPECIES COMMON NAME	CODE (23)	GRP. (24)	STATUS (25)	USE GENERAL (26)	USE SPECIFIC (27)	CRUCIAL (28) WI	CRUCIAL SP	CRUCIAL SU	CRUCIAL FA	METHOD (29)	OCCURRENCE (30) WI	OCCURRENCE SP	OCCURRENCE SU	OCCURRENCE FA	COMMENTS (Limit 40 characters) (31)
DESERT SHREW	NØCR	M	OT	YLEA	YLEA						H	H	H	H	PREFERS LOWLANDS
HOARY BAT	LACI	M	OT	SSMA	SSRO					L	S	O	O	S	RARE MIGRANT
TX ANTL. GRN. SQ	AMIN	M	OT	SSBR	SSDE					C		C	C		
〃	〃	〃	OT	FAMA	FAMA					C					
〃	〃	〃	OT	WIMA	WIHI					L	U				
MULE DEER	ØDHE	M	OT	YLEA	YLEA	C				S	C	C	C	C	
COLLARED LIZARD	CRCØ	H	OT	YLEA	YLEA					C	C	C	C	C	
E. FENCE LIZARD	SCUN	H	OT	YLEA	YLEA					C	C	C	C	C	
TURKEY VULTURE	CAAU	B	OT	SSBR	SSNE					S	S	C	C		
〃	〃	〃	OT	FAMF	FASM					S				C	
COOPERS HAWK	ACCØ	R	OT	YLEA	YLEA					S	U	U	U	U	

(Instructions on reverse)



GENERAL INSTRUCTIONS

1. Wildlife Biologist completes form using Wildlife Inventory Data.
2. Entry codes are found in BLM Manual Section 6602 and BLM Data Element Dictionary. Current copies may be obtained by contacting the Office of Data Systems, Denver Service Center.
3. After completion, form is sent to DSC for computer entry *(see BLM Manual Section 6602)*. After verification by DSC, forms are returned to submitting officers. Forms may be stored or disposed of according to GSA Schedule.
4. PAGE __ OF __ Enter after completing all sheets of a set, *(i.e., all sheets for one habitat site or all sheets for one standard habitat site)*. Data is not key-entered.
5. SHS NAME – Enter name of Standard Habitat Site associated with code entered in data field (4). Data is not key-entered.
6. RECORDED BY – Enter name of person who completed this form. Data is not key-entered.
7. DATE – Enter date form was filled out. Data is not key-entered.

SPECIFIC INSTRUCTIONS

Item

2 FORMAT CODE *(1 character)* – The format code is used to indicate sections of the form to be filled out for different purposes.

CODE 1 – Indicates form is used for site specific Habitat Site (SWA) data with Animal Occurrence Data.
COMPLETE – Header, Section I, Section II.

CODE 2 – Indicates from is used for Habitat Site Data without Animal Occurrence Data.
COMPLETE – Header, Section I.

CODE 3 – Indicates form is used for Standard Habitat Site summary data.
COMPLETE – Header *(without SWA Number)*, Section I *(Cross References only)*, Section II *(without Crucial)*.

3 BLM ADMINISTRATIVE UNIT *(8 characters)* – Enter appropriate code from Data Element (0003).

4 STANDARD HABITAT SITE CODE *(5 characters)* – Enter appropriate code from Data Element (6539).

5 SWA NUMBER *(4 characters)* – Enter the SWA Number for habitat site. *Do not* fill out if the format code is 3. If other inventories such as SVIM have been made on the same area, the same SWA Number *must* be used to represent the same map area.

6 ACTION CODE *(1 character)* – Enter "A" if adding, "C" if changing, or "D" if deleting data.

SECTION I – HABITAT SITE (SWA) DATA

Entire section is to be filled out if format code is 1 or 2. If format code is 3, fill out Cross References only.

7 YEAR INVENTORY *(4 characters)* – Enter last two digits of year initial inventory process was begun and last two digits of year it was initially completed. If this is an update or significant addition, enter last two digits of initial inventory starting year and last two digits of present year.

8 through 10 HABITAT SITE NAME *(17 characters)* – Enter habitat site name of SWA using 4–7 character plant codes for dominant and sub-dominant plants from Data Element (2646) and 3 character landform code from Data Element (5132). Left justify each field.

11 STRUCTURAL HEIGHT *(2 characters)* – Enter appropriate code from Data Element (6514).

12 ACRES *(5 characters)* – Enter number of acres, to nearest whole acre, that the habitat site (SWA) covers. Right justify this field.

13 SLOPE *(3 characters)* – Enter average rise in feet per 100 ft. of horizontal distance, to nearest whole percent. Right justify this field.

14 ASPECT *(2 characters)* – Enter appropriate code from Data Element (6523).

15 ELEVATION *(3 characters)* – Enter in 100's of feet, above or below sea level, to the nearest 100 ft. Elevations below sea level should be preceeded by a minus sign (–). Right justify this field.

16 SPECIAL HABITAT FEATURES IN HABITAT SITE (SWA) *5 maximum (15 characters)* – Enter appropriate three character code from Data Element (6509), for each special feature found in the habitat site. A maximum of five features per page. Use additional pages as needed to enter all special features present. Left justify this field.

17 PHYSIOGRAPHIC REGION *(2 characters)* – Enter appropriate code from Data Element (6538).

18 SUBPHYSIOGRAPHIC REGION *(3 characters)* – Enter appropriate code from Data Element (6537). If no codes are listed for your inventory area, leave blank.

19 ASSOCIATION *(3 characters)* – Enter appropriate code from Data Element (6536).

Item

20 BIOME *(1 character)* – Enter appropriate code from Data Element (6534).

21 ECOREGION *(5 characters)* – Enter appropriate code from Data Element (6535). If code selected has only 4 characters, *(i.e., no altitudinal zonation)*, leave the first space on the left blank.

22 STANDARD HAB TYPE *(3 characters)* – Enter appropriate code from Data Element (6533).

SECTION II – ANIMAL OCCURRENCE DATA

Section is to be filled out if the format code is 1 or 3.

COMMON NAME – Enter common name of animal referred to by animal species code *(column 23)*. Data is not key-entered, it is to be used for your reference only. The common name in the stored data record will come from the Data Element Dictionary and will be based on species code entered in column 23.

23 ANIMAL SPECIES CODE *(8 characters)* – Enter appropriate code from Data Element (6554).

24 GROUP *(1 character)* – Enter appropriate code from Data Element (6580).

25 STATUS *(2 characters)* – Enter appropriate code from Data Element (6530).

26 USE, GENERAL *(4 characters)* – Enter appropriate two character code from Data Element (5450), followed by the appropriate two character code from Data Element (6542).

27 USE, SPECIFIC *(4 characters)* – Enter appropriate two character code from Data Element (5450), followed by the appropriate two character code from Data Element (6549).

28 CRUCIAL *(1 character)* – Enter a "C" under the season or seasons in which the use of this habitat site is crucial to the species. See Data Element (6546), for further definition of crucial. This field *must* be blank for all seasons if the format code *(item 2)*, is a 3 indicating the data refers to a Standard Habitat Site.

29 METHOD *(1 character)* – Enter appropriate code from Data Element (6579). This field *must* be filled in if the animal's occurrence has been verified in any season *(see column 30)*. This field *must* be left blank if the animal's only occurrence is hypothetical *(see column 30)*.

30 OCCURRENCE *(1 character)* – Enter appropriate code from Data Element (6529), under each season in which the animal occurs. Different seasons may have different abundances. Hypothetical occurrences are indicated by entering the code H.

31 COMMENTS *(40 characters)* – Limit of 40 characters of input.

CONTINUATION SHEETS

There are two instances in which continuation sheets should be used: (1) If there are more than five (5) special habitat features within a habitat site. (2) If there are more animals present in a habitat site or a standard habitat site than there are lines in Section II. Continuation sheets should be filled out as follows: If the Format Code is a 1 or 2, then fill out items 3 *(BLM Administrative Unit)* and 5 *(SWA Number)* on the continuation sheet, in addition to the items to be continued (item 16 and/or Section II). If the Format Code is a 3, then fill out items 3 *(BLM Administrative Unit)* and 4 *(Standard Habitat Site Code)*, in addition to the items to be continued in Section II. In all cases, fill out the PAGE __ OF __ item in the header when all the continuation sheets have been completed for a habitat site or a standard habitat site.

Figure 2. Animal Species Occurrence, Instructions

Figure 3. Special Habitat Feature

Form 6602-2
(January 1982)

Page 1 of 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SPECIAL HABITAT FEATURE
(Integrated Habitat Inventory and Classification System)

(1) Record Type	W	2						
(2) BLM Admin Unit (ST/DI/RA/PU)	N	M	0	3	7	8	0	5
(3) SWA Number	J	0	2	1				
(4) Special Habitat Feature	A	1	3					
(5) Action Code (A, C, or D)	A							

Recorded by JOHN DOE Date 79/03/01

SECTION I. FEATURE DESCRIPTION AND LOCATION

(6) GENERAL DESCRIPTION OF SPECIAL HABITAT FEATURE (Maximum 20 characters per line)

1. STEEP WALLED CANYON
2. WITH SPRINGS
3.
4.

Map or Overlay Reference (not keyed)
13-34-23

SPECIAL FEATURE LOCATION

(7) Meridian 23 (8) Township 023 0S (9) Range 004 0E

SECTION (10)	(11) SUBDIVISION																ACRES (12)
	NE 1/4				NW 1/4				SW 1/4				SE 1/4				
	NE4	NW4	SW4	SE4	NE4	NW4	SW4	SE4	NE4	NW4	SW4	SE4	NE4	NW4	SW4	SE4	
007														X			1

SECTION II. SPECIES AFFECTED

ANIMAL SPECIES		USE		HAZARD (17)	CONFLICT (18)	COMMENTS (Limit 40 characters) (19)
CODE (13)	GRP. (14)	GENERAL (15)	SPECIFIC (16)			
ØDHE	M	YLMA	YLWA			DRIPPING SPRING

(Instructions on reverse)

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4. PAGE __ OF __ Enter after completing all sheets of a set. (*i.e., all sheets for one habitat site or all sheets for one standard habitat site*). Data is not key-entered.
5. RECORDED BY – Enter name of person who completed this form. Data is not key-entered.
6. DATE – Enter date form was filled out. Data is not key-entered.

SPECIFIC INSTRUCTIONS

Item

2 BLM ADMINISTRATIVE UNIT *(8 characters)* – Enter appropriate code from Data Element (0003).

3 SWA NUMBER *(4 characters)* – Enter SWA number for habitat site in which special feature is located. If other inventories such as SVIM have been conducted on the same area, same SWA Number *must* be used to represent the same map area.

4 SPECIAL HABITAT FEATURE *(3 characters)* – Enter appropriate code from Data Element (6509).

5 ACTION CODE *(1 character)* – Enter "A" if adding, "C" if changing, or "D" if deleting data.

SECTION I. FEATURE DESCRIPTION AND LOCATION

6 GENERAL DESCRIPTION OF SPECIAL HABITAT FEATURE *(80 characters)* – Record a concise narrative description of special habitat feature. Enter up to 20 characters per line. *(Maximum 4 lines x 20 characters per line = 80 characters total.)*

MAP OR OVERLAY REFERENCE – Enter reference for District use. Data is not key-entered.

7 MERIDIAN *(2 characters)* – Enter appropriate code from Data Element (1703).

8 TOWNSHIP *(5 characters)* – Enter three character whole township number followed by one character code indicating a partial or whole township, followed by either an N or an S, indicating the direction from the baseline. See Data Element (1695), for codes and further explanation of township. Example: 0400N for T40N.

9 RANGE *(5 characters)* – Enter three character whole range number, followed by one character code indicating a partial or whole range, or a duplicate or triplicate range, followed by either an E or a W, indicating the direction from the meridian. See Data Element (1699), for codes and further explanation of range. Example: 0300W for R30W.

10 SECTION *(3 characters)* – Enter section number(s) *(usually 1 to 36)* in which special habitat feature *(item 4)* is located. If feature is in more than three sections, use additional sheets to record all sections in which special feature is found.

11 SUBDIVISION *(16 characters)* – Enter an X under each 40 acre quarter of quarter section *(called an aliquot part)* in which special habitat feature is found. If feature crosses aliquot part boundaries, include all aliquot parts involved. See Data Element (2904), Aliquot part, for further information.

Item

12 ACRES *(5 characters)* – Enter number of acres, to nearest whole acre, the special habitat feature covers in each section.

SECTION II. SPECIES AFFECTED

13 ANIMAL SPECIES CODE *(8 characters)* – Enter appropriate code from Data Element (6554).

14 GROUP *(1 character)* – Enter appropriate code from Data Element (6580).

15 USE, GENERAL *(4 characters)* – Enter appropriate two character code from Data Element (5450), Season of Use, followed by the appropriate two character code from Data Element (6542), General Use.

16 USE, SPECIFIC *(4 characters)* – Enter appropriate two character code from Data Element (5450), Season of Use, followed by the appropriate two character code from Data Element (6549), Specific Use.

17 HAZARD *(2 characters)* – Enter appropriate code from Data Element (6570). *IF* the special feature poses a hazard to species listed. If no such hazard exists for species listed, leave field blank. See Data Element (6570) for specific definition of what constitutes a wildlife hazard.

18 CONFLICT *(2 characters)* – Enter appropriate code from Data Element (6571). *IF* use of the special feature poses a conflict with species listed. If no such conflict exists for species listed, leave field blank. See Data Element (6571) for specific definition of what constitutes a habitat conflict.

19 COMMENTS *(40 characters)* – Limit of 40 characters of input.

CONTINUATION SHEETS

If the special feature location requires more than three sections to describe *OR* if its boundaries cross meridian, township, or range boundaries, use additional sheets, as necessary, to identify the feature's entire and exact location.

If there are more species affected by the special feature than there is room for on one sheet, use additional sheets, as necessary, to identify all the species affected by the feature.

In all cases, fill out items 2, 3, and 4 as well as the PAGE ___ OF ___ item on each continuation sheet.

Figure 4. Special Habitat Feature, Instructions

IHICS Classification

Classification Level	How Delineated
Physiographic Regions	Delineated and described by Brown and Kerr (BLM Manual Section 6602).
Subphysiographic Regions	Optional - Delineated by BLM State Offices and coordinated with BLM Denver Service Center.
Association	Delineated and described by A. W. Kuchler by map and manual (Kuchler 1964 and 1975).
Standard Habitat Sites	Aggregated and described by Field Inventory Crew.
Habitat Sites	Delineated and described by Field Inventory Crew.
Special Habitat Features*	Mapped by Field Inventory Crew.

*Includes such things as caves, springs or bridges that are not described and delineated by vegetation inventories.

Figure 5. IHICS Classification

Form 6602–3
(January 1982)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RESOURCE FIELD DATA
SUMMARY SHEET

1a. Habitat Site Writeup No. A020
1b. Habitat Site Name POFR2 SAGO OSR
2. Acres 30
3. Structural Height YF
4a. Aspect SW | 4b. Slope 1 | 4c. Elevation 20
5a. Total Percent Cover
5b. Number Stations 500 | 5c. With Vegetation 200

Recorded by: JOHN DOE | Date: 79/03/01

6. General Structure (*Circle one*):

GRASSLAND BRUSHLAND WOODLAND (FOREST)

PLANT COMPOSITION

PLANT SPECIES (7)	TRANSECT HITS SUMMARY (8) GROUND	2	3	4	TOTAL	PERCENT COMPOSITION (9)
POFR2	0	0	3	37	40	20
SAGO	0	1	21	30	52	26
PRGL	0	2	12	18	32	16
ACGR	0	3	20	3	26	13
BABR	0	14	6	0	20	10
ACCO2	1	1	0	0	2	1
ZIOB	0	4	0	0	4	2
LYCIU	8	4	0	0	12	6
HYMO	3	5	0	0	8	4
CERE2	0	2	0	0	2	1
BAMU	0	2	0	0	2	1
TOTAL HITS EACH LEVEL	12	38	62	88	TOTAL HITS TRANSECT 200	100%

(10) Other species in Habitat Site Not Hit on Vegetation Transect

1. SAME	7.	13.
2. PSCO2	8.	14.
3. CHLI3	9.	15.
4.	10.	16.
5.	11.	17.
6.	12.	18.

(Instructions on reverse)

Figure 6. Resource Field Data Summary Sheet

GENERAL INSTRUCTIONS

This form is to be completed if there has been no SVIM or other vegetation inventory on the same habitat sites covered by the IHICS Wildlife Inventory.

SPECIFIC INSTRUCTIONS

Item

1a HABITAT SITE WRITEUP NUMBER – Enter the code consisting of a letter followed by a three-digit number.

1b HABITAT SITE NAME – Assign the site a name code using the 4 to 7 character plant codes from Data Element 2646 for the dominant and sub-dominant plants present and the 3 character landform code from Data Element 5132.

2 ACRES – Enter the total acreage of the Habitat Site Writeup Area.

3 STRUCTURAL HEIGHT – Enter the appropriate code from Data Element 6514 indicating the aspect height or the relative age or seral progress of vegetation on the habitat site.

4a ASPECT – Enter a one or two character code from Data Element 6532 indicating the direction the Habitat Site faces.

4b SLOPE *(3 characters)* – Enter the average rise in feet per 100 ft. of horizontal distance, to the nearest whole percent. Right justify this field.

4c ELEVATION *(3 characters)* – Enter the elevation, in 100's of feet, above or below (–) sea level to the nearest 100 ft. Elevations below sea level should be preceeded by a minus sign (–). Right justify this field.

5a TOTAL PERCENT COVER – Enter the total percent cover *(up to a maximum of 100%)* by estimating the total percent of ground covered from overhead with a spherical densiometer *(preferred method)* or by dividing the total number of transect stations with one or more vegetation hits by the total number of transect stations. *(see 5b & c).*

5 b & c NUMBER STATIONS/NUMBER STATIONS WITH VEGETATION – Enter the total number of stations on the transect and the total number of stations with at least one vegetative hit.

6 GENERAL STRUCTURE – Use the following criteria to determine which structure entry to circle:

GRASSLAND – Cover of brush and/or tree species taken from step point transect does *NOT* exceed 20% composition.

BRUSHLAND – Cover of brush and/or tree species taken from step point transect is more than 20% composition and mostly brush.

WOODLAND – Cover of woodland species taken from step point transect is more than 20% composition.

FOREST – Cover of forest tree species taken from step point transect *(other than 20% woodland species)* exceeds 20% composition.

7 PLANT SPECIES – Enter plant codes from Data Element 2646 for plant species encountered on the transect.

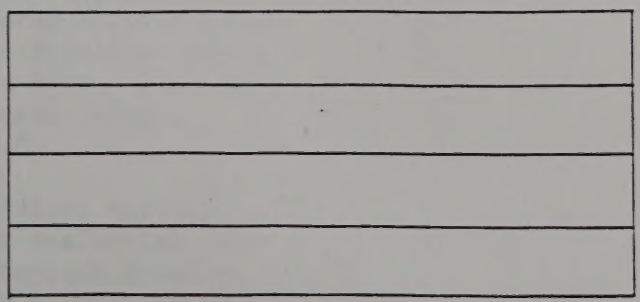
8 TRANSECT HITS SUMMARY – Use arabic numerals. Enter the total number of hits in each canopy level shown for each plant species listed in Item 7. Enter the total number of hits in all canopy levels for each species under *TOTAL*. Up to 16 species of plants may be listed as occurring on the transect. At the bottom, enter the total number of hits in each canopy level, regardless of species in the spaces labeled: *TOTAL HITS EACH LEVEL*. Enter the total number of vegetation hits for all canopy levels and all species under *TOTAL HITS TRANSECT*.

9 PERCENT COMPOSITION – Enter the percent composition of each plant species on the transect as follows:

$$\text{Percent Composition}_{\text{(each species)}} = \frac{\text{Ground} + 2 + 3 + 4 \text{ (each species)}}{\text{Ground} + 2 + 3 + 4 \text{ (all species)}} \times 100 = \frac{\text{TOTAL (all levels, each species)}}{\text{TOTAL HITS TRANSECT (all species, all levels)}} \times 100$$

10 OTHER SPECIES – Enter the plant codes from Data Element 2646 for the plant species in the area, but not hit on the transect.

11 VERTICAL STRUCTURE DIAGRAM – **OPTIONAL **



Sketch in the general silhouette of the vertical structure of the Habitat Site. Label the vertical scale of the diagram to indicate the height of the vegetative

Figure 7. Resource Field Data Summary Sheet, Instructions

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